

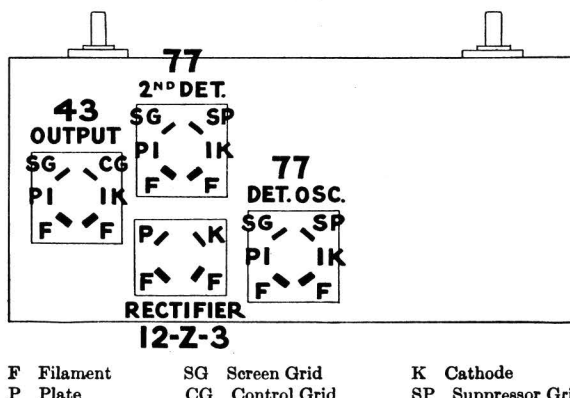
# PHILCO

REG. U.S. PAT. OFF.

## Service Bulletin—No. 149

### Model 53

The Philco Radio Model 53 is a four tube superheterodyne, employing the new Philco high efficiency tubes with pentode output and a permanent Field Dynamic Speaker. The set uses a Philco Type 77 tube as a first detector and oscillator, a Type 77 tube as second detector, a Type 43 tube as output, and a Type 12-Z-3 as a rectifier. The set will operate universally on either alternating or direct current, 105-125 Volts. The intermediate frequency for tuning the I.F. transformer is 450 kilocycles. The power consumption on both A. C. and D. C. is approximately 45 watts.



F Filament                      SG Screen Grid                      K Cathode  
P Plate                              CG Control Grid                      SP Suppressor Grid

Fig. 1—Tube Sockets, Under Side of Chassis

Table 1—Tube Socket Data\*—A.C. Line Voltage 115 Volts

| Circuit                         | Det. Osc.      | 2nd Det.       | Out-put | Rectifier |
|---------------------------------|----------------|----------------|---------|-----------|
| Type Tube                       | 77             | 77             | 43      | 12-Z-3    |
| Filament—Total 49.9 Volts A. C. | Refer to Note. | Refer to Note. |         |           |
| Plate Volts—P to K.....         | 95             | 15             | 94      | 112       |
| Screen Grid Volts—SG to K...    | 94             | 34             | 102     | ....      |
| Control Grid Volts—CG to K..    | 7              | 4              | 4       | ....      |
| Cathode Volts—K to F.....       | 18             | 12             | 10      | 112       |

NOTE:—Refer to Fig. 3. Due to filaments in series, test with suitable A. C. voltmeter across the two points indicated.

\*All of the readings above in Table 1 were taken from the under side of chassis, using test prods and leads with a suitable A. C. voltmeter for filament voltage and a high resistance, multi-range D. C. voltmeter for all other readings. Volume control at maximum and station selector set for 550 KC. Readings taken with a radio set tester and plug-in adapter will not be satisfactory.

Table 2—Tube Socket Data\*—D.C. Line Voltage 120 Volts

| Circuit                      | Det. Osc.      | 2nd Det.       | Out-put | Rectifier |
|------------------------------|----------------|----------------|---------|-----------|
| Type Tube                    | 77             | 77             | 43      | 12-Z-3    |
| Filament—Total 51 Volts D.C. | Refer to Note. | Refer to Note. |         |           |
| Plate Volts—P to K.....      | 95             | 14             | 94      | 10        |
| Screen Grid Volts—SG to K... | 93             | 34             | 100     | ....      |
| Control Grid Volts—CG to K.. | 8              | 3              | 4       | ....      |
| Cathode Volts—K to F.....    | 7-14           | 6-12           | 3-26    | 58-73     |

NOTE:—Refer to Fig. 3. Due to filaments in series, test with suitable D.C. Voltmeter across the two points indicated.

\*All of the readings above in Table 2 were taken from the under side of chassis, using test prods and leads with a suitable high resistance, multi-range D. C. voltmeter for all readings. Volume control at maximum and station selector set for 550 KC. Readings taken with a radio set tester and plug-in adapter will not be satisfactory.

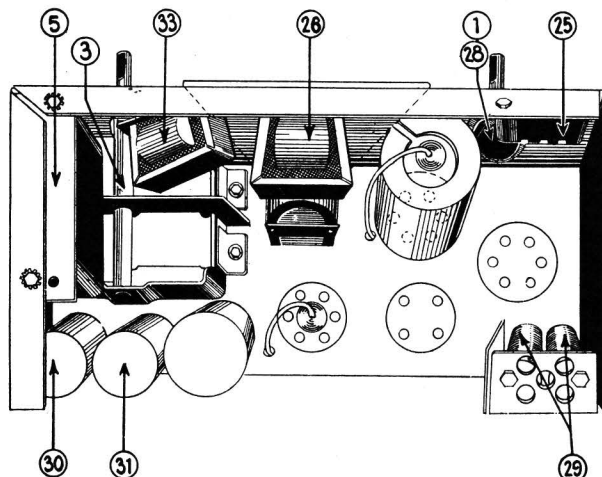


Fig. 2—Top View of Chassis, Showing Parts

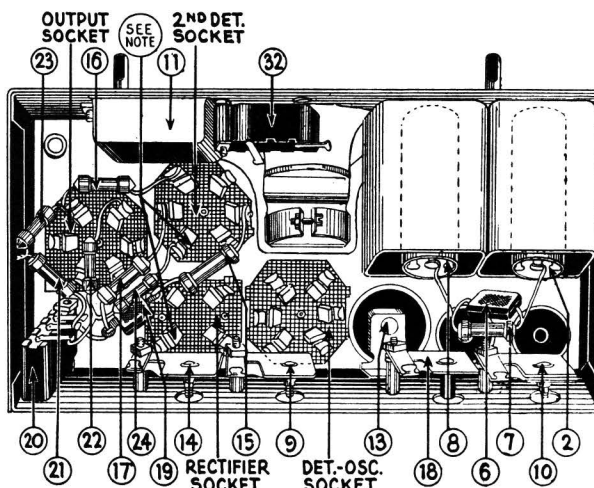


Fig. 3—Bottom View of Chassis, Showing Parts

NOTE:—Place test prods across the two points indicated to test filament voltage.

**Model 53**

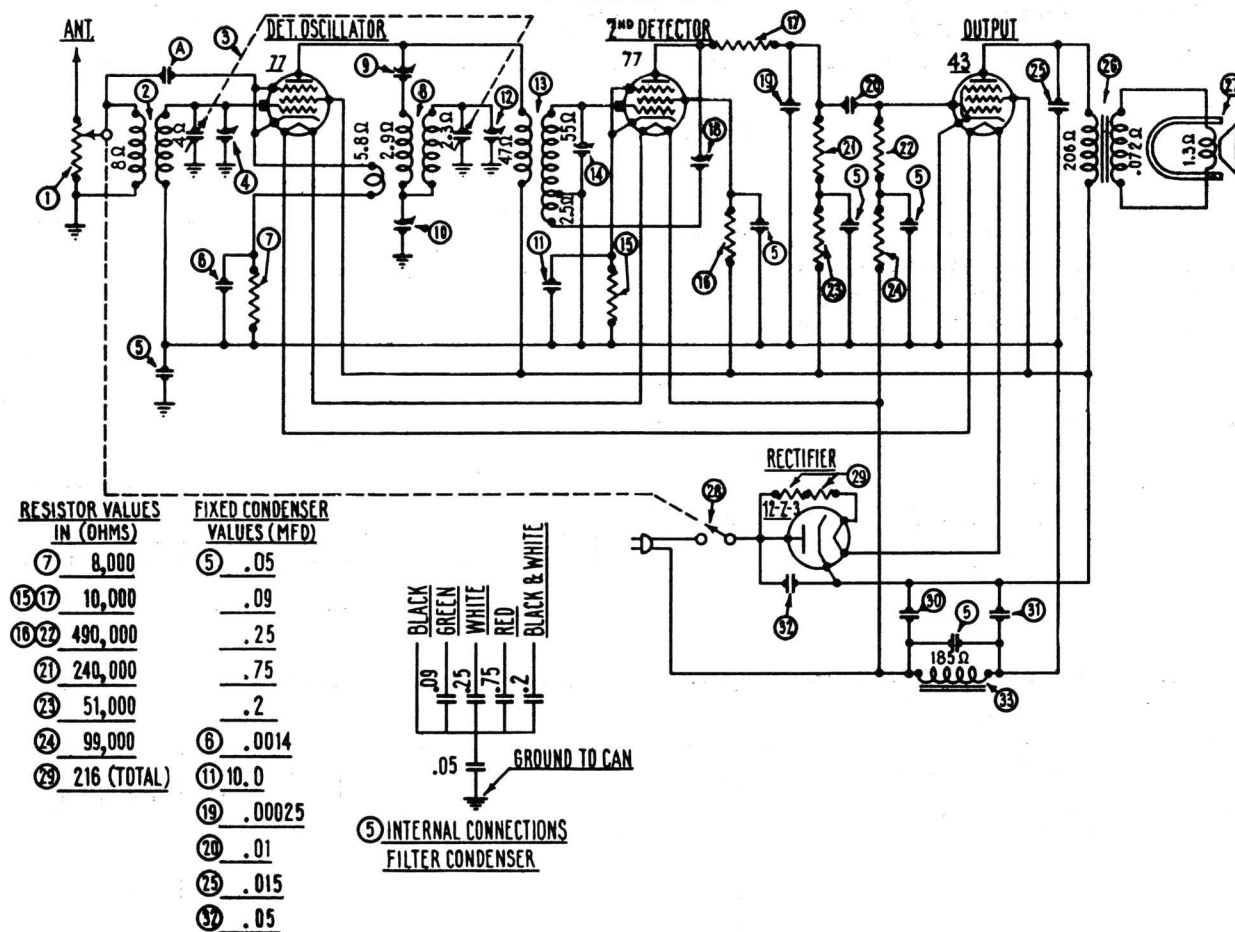


Figure 4—Schematic Wiring Diagram  
 NOTE A—This capacity obtained by pair twisted wires

**Replacement Parts for Model 53**

| No. on Figs. 2, 3 and 4 | Description  | Part No. | No. on Figs. 2, 3 and 4 | Description                                    | Part No.           |
|-------------------------|--|----------|-------------------------|--|--------------------|
| 1                       | Volume Control   | 33-5001  | 20                      | Condenser (.01 Mfd.)                           | 3903-AM            |
| 2                       | Antenna Transformer  | 32-1000  | 21                      | Resistor (240,000 ohms) Red-Yellow-Yellow      | 4410               |
| 3                       | Tuning Condenser Assembly                                  | 31-1000  | 22                      | Resistor (490,000 ohms) Yellow-White-Yellow    | 4517               |
| 4                       | Compensating Condenser (Part of Tuning Condenser Assembly) |          | 23                      | Resistor (51,000 ohms) Green-Brown-Orange      | 4518               |
| 5                       | Filter Condenser Block (.05-.09-.25-.75-.2 Mfd.)           | 30-4000  | 24                      | Resistor (99,000 ohms) White-White-Orange      | 4411               |
| 6                       | Condenser (.0014 Mfd.)                                     | 7007     | 25                      | Condenser (.015 Mfd.)                          | 3793-S             |
| 7                       | Resistor (8,000 ohms) Gray-Black-Red                       | 5838     | 26                      | Output Transformer                             | 32-7000            |
| 8                       | Oscillator Transformer                                     | 32-1001  | 27                      | Voice Coil and Cone Assembly                   | 36-3000            |
| 9                       | Compensating Condenser (I.F. Primary)                      | 04000-A  | 28                      | A. C. Switch (Part of Volume Control Assembly) | 33-5001            |
| 10                      | Compensating Cond. (Low Frequency)                         | 04000-S  | 29                      | Resistors (2 Wire Wound-108 ohms each)         | 33-3000<br>33-3001 |
| 11                      | Condenser (10.0 Mfd.)                                      | 7440     | 30                      | Electrolytic Condenser (8 Mfd.)                | 30-2000            |
| 12                      | Compensating Condenser (Part of Tuning Condenser Assembly) |          | 31                      | Electrolytic Condenser (8 Mfd.)                | 30-2000            |
| 13                      | I.F. Transformer   | 32-1002  | 32                      | Condenser (.05 Mfd.)                           | 3615-E             |
| 14                      | Compensating Cond. (I.F. Secondary)                        | 04000-A  | 33                      | Filter Choke                                   | 32-7000            |
| 15                      | Resistor (10,000 ohms) Brown-Black-Orange                  | 4412     |                         | Tube Shield                                    | 7172               |
| 16                      | Resistor (490,000 ohms) Yellow-White-Yellow                | 4517     |                         | Knobs (Both Controls)                          | 03064              |
| 17                      | Resistor (10,000 ohms) Brown-Black-Orange                  | 4412     |                         | Four Prong Socket                              | 7544               |
| 18                      | Compensating Condenser (Regeneration)                      | 04000    |                         | Six Prong Socket                               | 7547               |
| 19                      | Condenser (.00025 Mfd.)                                    | 3082     |                         | Pointer for Station Selector                   | 28-1019            |
|                         |  |          |                         | Dial   | 28-1021            |

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